

**AMENDMENTS TO THE CLAIMS**

Claims 1-7. (Canceled)

8. (New) A method for measuring the dimensions of patterns formed on a sample on the basis of a line profile which is obtained from an image formed by the electrons emitted from the patterns on the samples scanned with electron beams comprising:

for the obtained line profile, detecting edges of the patterns according to a predetermined first edge position detecting method and calculating distances between the detected edges according to a predetermined first measuring method; and

for said line profile, establishing a second edge position detecting method and a second measuring method and measuring the dimensions of patterns according to the established second edge position detecting method and second measuring method.

9. (New) The method as claimed in claim 8, wherein the measuring methods include measurement of line widths and edge roughness of the line profile.

10. (New) A scanning electron microscope comprising a computer for measuring the dimensions of patterns formed on a sample on the basis of a line profile which is obtained from an image formed by the electrons emitted from the patterns on the samples scanned with electron beams, wherein

the computer is arranged to perform a plurality of edge position detecting methods and a plurality of measuring methods for calculating distances between detected edges;

the computer detects, for the obtained line profile, edges of the patterns according to a predetermined first edge position detecting method and calculates

distances between the detected edges according to a predetermined first measuring method; and

the computer establishes, for said line profile, a second edge position detecting method and a second measuring method.

11. (New) The scanning electron microscope as claimed in claim 10, wherein the measuring methods include measurement of line widths and edge roughness of the line profile.

12. (New) The scanning electron microscope as claimed in claim 10, further comprising a display means for displaying information about the edge position detecting methods and the measuring methods.